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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,026	07/11/2005	Isao Kawahara	2005_0977A	6756

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EXAMINER

BLOOM, NATHAN J

ART UNIT	PAPER NUMBER
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2624

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/542,026

Applicant(s)

KAWAHARA, ISAO

Examiner

Nathan Bloom

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/11/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawahara (WO00/62275). Note: US2005/0237277 and US7071902 claim priority to this prior published document and the US PGPub (US 2005/0237277) is being used as the English language equivalent for the PCT publication WO00/62275. US2005/0237277 is a divisional application of the application that is now US7071902.

Instant claim 1: An image correction method that provides an image signal with image correction by switching correcting methods according to the image signal, the image correction method comprising:

detecting an image area having movement according to the image signal; [*Figure 1 item 6 (motion detection circuit) as described in paragraph 0077, and Figure 4 depicts the motion detection circuit. Further description of the operations of the motion detection circuit is in paragraphs 0083-0086.*]

comparing gradation of image signals corresponding to adjoining pixels; and [*See figure 4 item 62 and paragraph 0085 wherein the differential circuit compares corresponding pixels between two frame (image) signals. The corresponding or adjoining (next to each other in the*

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corresponding frames) pixels are differenced and thus the gradation of the signals are compared.]

providing a boundary area of the image area having movement with a diffusion process in an area having gradational change smaller than a predetermined threshold, [Kawahara '277 has provided in paragraph that the regions above a certain reference value (threshold) are considered motion regions, and that regions below this level are static regions. Furthermore, Kawahara '277 has provided that there is a threshold (reference value) and that Kawahara '277 identifies a boundary region as described in paragraphs 00169 and 0187 wherein it is indicated where the value of the motion detection signal changes. From this disclosure by Kawahara it is clear that the boundary region is the region immediately neighboring the motion region where the high difference values change to low difference values and thus the values are below a predetermined reference value or threshold. Therefore, Kawahara has inherently required that there is a threshold value under which a boundary region is indicated. Furthermore as indicated in the rejection of claims 2-4 Kawahara '277 has disclosed the diffusion of this non-linearity at the boundary region.]

wherein, the image correction is performed differently between the image area having movement of which the boundary area is diffused and other areas. [The correction (coding) is described in paragraphs 0081-0086 of Kawahara '277.]

Instant claim 2: An image correction device having a movement detecting means for detecting an image area having movement according to an image signal; and an image correcting means

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capable of providing the image signal with image correction and switching correction methods according to a control signal, the device further including:

a movement boundary detecting means for detecting a boundary area of the image area having movement; *[The boundary detection circuit that detects a boundary of the movement region is depicted in figures 18 and 22 as object 18 and is described in paragraphs 0169 and 0187. For a depiction of the object and boundary see figures 19 and 23 as described in paragraphs 0171-0172, and 0188.]*

a gradational change detecting means for detecting an image area with great gradational change by comparing gradation of image signals corresponding to adjoining pixels; and *[See figure 4 item 62 and paragraph 0085 wherein the differential circuit compares corresponding pixels between two frame (image) signals. The corresponding or adjoining (next to each other in the corresponding frames) pixels are differenced and thus the gradation of the signals is compared. Gradation as described by applicant is the differencing of image signals as is described by Kawahara in the presented prior art.]*

a movement signal modulating means for providing the boundary area of the image area having movement with a diffusion process in an area excluding the image area with great gradational change, *[In paragraphs 0169-0174 Kawahara '277 describes a modulating circuit that diffuses an image area at the boundary (not the movement region itself) of the movement region. The diffusion or random/alternating states of the boundary region pixels due to the modulating means prevents a non-linear transition (see paragraphs 0173-0174) between the static and motion regions of the image. See figures 19 and item 17 of figure 18 (or items 25-26 of figure 22) for the modulation circuit block diagram. Also, Kawahara '277 describes the modulation*

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and different methods of diffusing the boundary region in paragraphs 0163-0166, 0188-0190, and 0196-0199.]

wherein, the image correcting means switches correction methods according to an output from the movement signal modulating means. *[See figure 18 and the corresponding description in paragraphs 0167-0175, wherein the correction (coding) is selected by the selection circuit (item 7 of figure 18) based on the output of the modulation circuit. The correction (coding) methods are described in paragraphs 0078-0086 of Kawahara '277.]*

Instant claim 3: The image correction device of claim 2, wherein the movement signal modulating means is formed of a delay circuit that delays an output of the movement detecting means at least in a horizontal direction or in a vertical direction. *[See figure 25 item 16 wherein a spatial delay circuit (space modulation circuit) randomly delays (shifts) the pixel position output from the moving image coding circuit in a horizontal or vertical direction (paragraphs 0194-200).]*

Instant claim 4: The image correction device of claim 3, wherein the movement signal modulating means provides the boundary area of the image area having movement with a diffusion process by randomly switching an amount of delay fed from the delay circuit that delays the output of the movement detecting means in a horizontal direction or in a vertical direction. *[The diffusion process as described by the applicants is the process of breaking up the boundary region such that there is not a non-linear appearance between the motion and static area. Kawahara '277 describes the random generation of the delay as per the rejection of*

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instant claim 3. Furthermore, Kawahara '277 describes in the listed sections that the random generation or modulation of the boundary area breaks up the non-linearity by creating a random shape and thus diffusing the boundary.]

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Kasahara (US 2002/0005857) – display apparatus that detects motion and gradation and corrects the noise caused at the boundaries.
- Kawahara (US 7071902) –Kawahara '277 is a divisional of this application published via PCT as WO00/62275 in Oct. 19th 2000.
- Kawahara (WO00/62275)- published PCT of Kawahara '277 and 7071902.
- Kasahara (US 6690388) – similar to US 2002/0005857.
- Denda (US 6335735) – image correction based on amount of motion.
- Yamada (US 2005/0225512) – motion detection and correction.
- Yoshida (US 2006/0139289) – corrects displaying motion regions on an LCD display apparatus.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Bloom whose telephone number is 571-272-9321. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed, can be reached on 571-272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NB



SAMIR AHMED
SUPERVISORY PATENT EXAMINER